



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,721	10/10/2001	George Mathew	15-XZ-6153	3643

27256 7590 04/16/2004

ARTZ & ARTZ, P.C.
28333 TELEGRAPH RD.
SUITE 250
SOUTHFIELD, MI 48034

EXAMINER

PEREZ DAPLE, AARON C

ART UNIT	PAPER NUMBER
----------	--------------

2121

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,721

Applicant(s)

MATHEW ET AL.

Examiner

Aaron Perez-Daple

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Action is in response to Amendment filed 3/9/04, which has been fully considered.
2. Claims 1-20 are presented for examination.
3. This Action is FINAL.

Response to Arguments

Claim Objections

4. Objections to claims 11 and 20 are withdrawn in view of the Amendment.

112 Rejections

5. The previous rejection of claims 1-7 under 35 U.S.C. 112, second paragraph, is withdrawn in view of the Amendment. However, a new rejection to the amended claims has been applied (see 112 rejections below).
6. The rejections of claims 7 and 16-19 under 35 U.S.C. 112, second paragraph, are withdrawn in view of the Amendment. The Examiner notes that Applicant uses the terms “annotated” and “runtime library” in a way that is non-standard in the art. However, Applicant has supplied sufficient support for this use in the specification and the claims, as detailed on pgs. 8-9 of the Amendment.

102 Rejections

7. Applicant's arguments filed 3/9/04 have been fully considered but they are not persuasive. Applicant presents an interpretation of the Russell reference in the last paragraph of pg. 9 of the Amendment. The Examiner respectfully disagrees with this interpretation. It appears that the Applicant has failed to note several of the steps disclosed by Russell,

although the Examiner acknowledges that several of these steps are inherent and may require a close reading.

Specifically, the Examiner interprets the steps of Russell as follows: a.) extract state information from a state model [col. 2, lines 40-43, "One traditional approach...description file."]; The 'state model,' though not explicitly recited in Russell, is inherent for generating the state table file. In other words, there must be an initial state model (pre-designed state model) for the compiler to act on in generating the state table, as understood by one of ordinary skill in the art. The extraction of state information is inherent to the step of compiling.] b.) process the extracted state information to generate a state table [processing is similarly inherent to compiling; col. 2, lines 40-43, "One traditional approach...description file."]; c.) generate state information (state code) from the state table [col. 2, lines 43-46, "The state information...state machine analyzer."]; d.) compile the state information (state code) to generate a data structure (runtime code) [col. 2, lines 46-48, "Using the extracted state...the finite state machine.]; e.) execute the runtime code [inherent for running the state machine]. Thus, it can be seen that steps a-d of Russell mirror steps A-D of the present invention as recited by Applicant in the third paragraph of pg. 9 of the Amendment. The difference lies in step E. Although the limitation is unclear (see 112 rejection below), Russell does not appear to teach implementing the state model by running said runtime code while utilizing information within said state table using a separate controller. Only claim 1 recites the limitation found in E.

8. With respect to claim 8, Applicant asserts on pg. 12 that Applicant fails to teach steps i, iv and vi as detailed in the first paragraph of page 12 of the Amendment. The Examiner

finds that these steps are anticipated by steps a-e of Russell, as detailed above. With regard to steps ii, iii and iv, Applicant asserts that Russell fails to teach the use of an event symbols header having global and shared event symbols definitions. First, the Examiner notes that in the context of software, the terms global and shared are essentially synonyms. A global or shared variable is one that is used throughout an entire file, program or system. The Examiner finds that the “symbol identifiers” of Russell are global and shared event symbol definitions. Indeed this is a fundamental piece of Russell’s invention, because it allows for the execution of various state machines independent of the hardware implementations [col. 5, lines 18-25, “Due to the...finite state machines.”]. Therefore, Russell anticipates each and every limitation of claim 8, which is properly rejected under 35 U.S.C. 102(a).

9. With respect to claims 11-15 and 20, Applicant asserts that Russell fails to teach or suggest the generation of a state code and state table in response to one or more state models. The Examiner finds that Russell teaches these limitations for the reasons cited above. Therefore, claims 11-15 and 20 are properly rejected under 35 U.S.C. 102(a) as anticipated by Russell.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
11. **Claims 1-7** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the new limitation “using a separate controller” recited

Art Unit: 2121

in lines 9-10 renders the claim indefinite. First, it is not clear what function the controller performs (e.g. Does the controller regulate the use of state table information, or control the state machine itself?). Second, it is not clear what the controller is claimed as being separate from, since no other hardware elements are specifically recited in the claims (e.g. Is the controller separate from a state machine, from a compiler, from the model?). Because of the lack of clarity surrounding this claim limitation, the Examiner is unable to apply prior art to the claims.

12. As dependent claims, claims 2-7 suffer from the same deficiencies as claim 1.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

14. **Claims 8, 11-15 and 20** are rejected under 35 U.S.C. 102(a) as being anticipated by Russell (US 6,212,625 B1) (hereinafter Russell).
15. As for claim 8, Russell teaches a method for implementing a pre-designed plurality of state models for a state machine having an event configuration file, said method comprising:
- extracting state information from the plurality of state models [col. 2, lines 40-48, “One traditional approach... finite state machine.”; col. 5, lines 6-25, “Referring to Fig. 2... finite state machines.”];

generating an events symbols header having global and shared event symbol definitions from the event configuration file [col. 5, lines 37-59, "The storage unit...entry table 510."];

processing said extracted state information in response to said events symbols header [col. 5, lines 37-59, "The storage unit...entry table 510."];

generating a plurality of state codes and a plurality of state tables in response to said processed extracted state information [col. 2, lines 40-48, "One traditional approach...finite state machine."; col. 5, lines 6-25, "Referring to Fig. 2...finite state machines."];

compiling said plurality of state codes using said events symbols header to generate a plurality of runtime codes [col. 5, lines 37-59, "The storage unit...entry table 510."]; and

implementing the state model by running said plurality of runtime codes while referring to said plurality of state tables [col. 2, lines 40-48, "One traditional approach...finite state machine."].

16. As for claim 11, Russell discloses a state processor for generating a state table and a runtime code for use in implementing of one or more pre-designed state models, said device comprising:

a state model information provider extracting state model information in response to the one or more state models [col. 2, lines 40-48, "One traditional approach...finite state machine."];

a state information separator generating a state code and the state table in response to the one or more state models [col. 2, lines 40-48, "One traditional approach...finite state machine."]; and

a compiler compiling said state code and generating the runtime code [col. 2, lines 40-48,

“One traditional approach... finite state machine.”].

17. As for claim 12, Russell discloses a device as in claim 11 further comprising an event organizer generating an event symbols header in response to a header file [col. 5, lines 37-59,

“The storage unit...entry table 510.”]; and

said compiler compiling said state code using said event symbols header [col. 5, lines 37-59, “The storage unit...entry table 510.”].

18. As for claim 13, Russell discloses a device as in claim 12 wherein said event organizer generates an event symbols header comprising a centralized list of all events for adding or renaming events [col. 5, lines 37-59, “The storage unit...entry table 510.”].

19. As for claim 14, Russell discloses a device as in claim 12 wherein said event symbols header comprises global and shared event symbol definitions [col. 5, lines 37-59, “The storage unit...entry table 510.”].

20. As for claim 15, Russell discloses a device as in claim 12 wherein said header file comprises global and shared event symbol definitions [col. 5, lines 37-59, “The storage unit...entry table 510.”].

21. As for claim 20, Russell discloses a device as in claim 11, wherein said state processor generates a plurality of state tables and a plurality of state codes in response to one or more state models [col. 5, lines 6-25, “Referring to Fig. 2... finite state machines.”].

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. **Claims 9, 10, and 16-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell in view of Bernaden III et al (US 6,477,439 B1) (hereinafter Bernaden).

24. As for claim 9, Russell does not specifically disclose implementing a cooperating set of run-time controllers. Bernaden teaches a method similar to claim 8 wherein implementing a pre-designed plurality of state models comprises implementing a cooperating set of run-time controllers [col. 3, line 23 - col. 4, line 19, "In OOP, the state....data structure 19."]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell by implementing a cooperating set of run-time controllers, because this would allow for the execution of an object-oriented execution routine in the controller, as taught by Bernaden [col. 1, lines 39-46, "The present invention...in the controller."].

25. As for claim 10, Russell discloses a method similar to claim 8 further comprising:
generating said events symbols header in response to a header file [col. 5, lines 37-59, "The storage unit...entry table 510."]; and
generating a plurality of state codes in response to said processed extracted state information and said events symbols header [col. 5, lines 37-59, "The storage unit...entry table 510."].

26. As for claims 16-18, although obvious to one of ordinary skill in the art, Russell does not specifically teach the device of claim 11 further comprising a runtime library. Bernaden teaches a device similar to claim 11 further comprising a runtime library, wherein the runtime library comprises a generic state machine component for implementing event handling and a time and memory efficient interpreter for processing and handling events [col. 3, line 23 - col. 4, line 19, "In OOP, the...data structure 19."]. The runtime library of Bernaden further comprises an event processor and an interpreter for the execution of objects in the library [col. 4, lines 7-20, "The tabular data...the data structure 19."]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell by using a runtime library comprising an event processor and an interpreter, because this would allow for the execution of an object-oriented execution routine in the controller, as taught by Bernaden [col. 1, lines 39-46, "The present invention...in the controller."].
27. As for claim 19, Russell does not specifically teach an event processor comprising a scripted dynamic events process for annotating the one or more state models to alter state behavior. As amended and clarified on pgs. 8-9 the Amendment, the Examiner finds that Bernaden teaches a scripted dynamic events process for annotating the one or more state models to alter state behavior [col. 3, lines 48-56, "Attributes define data...class validate methods."]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell by using a scripted dynamic events process for annotating the one or more state models to alter state behavior, because this would allow for modification of the state model by a user, as taught by Bernaden [col. 3, lines 48-56, "Attributes define data...class validate methods."].

Conclusion

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Perez-Daple whose telephone number is 703-305-4897. The examiner can normally be reached on 9am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri can be reached on 703-305-0282. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information

Art Unit: 2121

for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 4/7/04

Aaron Perez-Daple



Anthony Knight
Supervisory Patent Examiner
Group 3600